

ABSTRACT

A process and system for evaluating the deterministic behavior of a packet switching network including subscriber stations connected to each other through at least one switch, the behavior defined as deterministic if any packet sent on the network from a source subscriber station joins the destination subscriber station(s) within a limited time. The process and system determines if each output port from each switch on the network satisfies the relationship:

$$\begin{array}{l} i \text{ number of virtual links} \\ \text{passing through the buffer} \end{array} \quad \left[1 + \text{int} \left(\frac{(Jitter\ In)_i + \max\ Latency}{BAG_i} \right) \right] * \\ (max\ frame\ duration) \leq latency \end{math>$$

- in which: the max latency value is a maximum residence time in an output buffer of a switch, this value may be different for each switch in the network, BAG_i is a minimum time between two consecutive frames belonging to a virtual link *i*, before they are transmitted, (Jitter In)_i is Jitter associated with a virtual link *i* that represents a time interval between a theoretical instant at which a frame is transmitted, and its effective transmission that may be before or after the theoretical instant, and (max frame duration)_i is a duration of a longest frame on the virtual link *i*.